

## INFORMATION SHEET: MATERIAL DISPOSAL AREA H

### LOS ALAMOS NATIONAL LABORATORY

Los Alamos National Laboratory (the Laboratory) is a multidisciplinary research facility owned by the Department of Energy (DOE) and managed by the University of California. The Laboratory is located in north-central New Mexico approximately 60 miles northeast of Albuquerque and 20 miles northwest of Santa Fe. The Laboratory covers 43 square miles of the Pajarito Plateau; the Plateau consists of a series of finger-like mesas that are separated by deep canyons containing perennial and intermittent streams running from west to east.

### ENVIRONMENTAL RESTORATION PROJECT

The Laboratory Environmental Restoration (ER) Project was established in 1989 as part of a Department of Energy nationwide program. The Project's purpose is to investigate whether hazardous chemicals and/or radioactive wastes are present as a result of past Laboratory operations and to remediate (clean up and restore) such sites.

### MATERIAL DISPOSAL AREAS AT THE LABORATORY

The 26 material disposal areas (MDAs) at the Laboratory generally include sites where waste material has been disposed of on or below ground surface in excavated pits, trenches, or shafts.

### MATERIAL DISPOSAL AREA H DESCRIPTION

MDA H (Potential Release Site [PRS] 54-004) will be the first of 10 mesa-top MDAs to undergo a corrective measures study to identify and evaluate different alternatives for future management of the site. MDA H is located north of Pajarito Road at Technical Area 54. MDA H is approximately one-third of an acre in size and contains nine inactive disposal shafts. Each shaft is cylindrical with a diameter of 6 feet and a depth of 60 feet. The shafts are filled with classified solid-form waste to a depth of 6 feet below the ground surface. The wastes in shafts 1 through 8 are covered by a 3-foot layer of concrete placed over a 3-foot layer of crushed tuff. The waste in shaft 9 is covered by 6 feet of concrete. To protect against the possible impacts of mesa-edge instability, all MDA H disposal shafts were located at least 50 feet from the rim of Pajarito Canyon (the nearest canyon). The waste is at least 900 feet above the regional aquifer. Much of the classified waste was nonhazardous; however, various hazardous chemicals, radionuclide-contaminated materials, and materials contaminated by high explosives were also disposed of at MDA H.

On a mass basis, the major contributor to the MDA H inventory is metals. Metals include depleted uranium, lead, and beryllium. High explosives, recording media (paper documents, film [developed], slides, magnetic computer tapes), and graphite are also large contributors to the mass of the inventory. The remainder of the inventory includes small percentages of unreacted fuel (consisting of various isotopes of uranium), lithium compounds, and plastics. MDA H also received a one-time disposal of a nonsolid-form waste when 40 lb of graphite-contaminated motor oil was placed in shaft 9.

- 1940s** The Laboratory was founded in 1943 as part of the Manhattan Project. Processes used to carry out the Laboratory's past and present missions involve the use of hazardous and radioactive materials.
- 1950s** During and after World War II, materials were disposed of on the Laboratory site or otherwise released into the environment.
- 1960s** Congress enacted basic legislation to protect the environment. The Department of Energy's predecessor, the Atomic Energy Commission, and the Laboratory began to conduct surveys and to clean up areas where spills and disposal had occurred.
- 1970s** Congress enacted the Resource Conservation and Recovery Act (RCRA) that governs the day-to-day operations of hazardous waste generation, treatment, storage, and disposal facilities (sites).
- 1980s** Congress amended RCRA by passing the Hazardous and Solid Waste Amendments (HSWA). HSWA prescribes a corrective action process that focuses primarily on the investigation and cleanup, if required, of inactive sites.
- 1989** The Laboratory's Environmental Restoration Project was created to clean up sites that were formerly involved in weapons research and production.
- 1990s** The ER Project works to investigate and clean up sites that have the potential to affect human health or the environment.
- 2000**

# INFORMATION SHEET: MATERIAL DISPOSAL AREA H

## What is a corrective action?

The RCRA corrective action process develops and implements measures to protect human health and the environment when required. The process is flexible and structured to achieve corrective action based on site-specific conditions.

## Why is corrective action required?

Through the corrective action process, the Environmental Protection Agency requires RCRA-regulated facilities to investigate and manage releases of hazardous waste or constituents to the environment. Corrective action is included as a requirement in the Laboratory's facility permit through statutory authorities. Facilities may also voluntarily choose corrective action.

## What is the process?

### *RCRA Facility Investigation*

Determines if a release has occurred, identifies the nature and extent of contamination, its source, and the environmental pathways along which contaminants could affect human and environmental receptors

### *Corrective Measures Study*

Identifies and evaluates different corrective action alternatives to manage risks from a site, and results in the selection of a single corrective action option

### *Corrective Measures Implementation*

Includes detailed design, construction, operation, maintenance, and monitoring of the selected corrective action option

## What is a site conceptual model?

The site conceptual model of MDA H integrates RFI data and scientific understanding to describe how contaminants may affect future risk to receptors in the future. The model describes the features, events, and processes that may contribute to a release of hazardous wastes or radionuclides buried at MDA H. It also evaluates the potential exposure to humans and the environment resulting from such a release and the probability and consequences of such an exposure.

## RCRA CORRECTIVE ACTION

RCRA corrective action addresses potentially contaminated sites that may present a potential future risk to humans and the environment. The NMED recommended a corrective measures study at MDA H because MDA H may present a future risk to humans and the environment even though current conditions at MDA H pose no unacceptable present-day risks.

The ER Project began implementation of the corrective action process in 1990. The RCRA facility investigation (RFI) at MDA H began in 1994 and 1995, and characterization was completed in 2001. RFI results show a release of tritium (in the form of water vapor) and low concentrations of vapor-phase volatile organic compounds (VOCs) from the subsurface shafts. ER Project personnel are initiating the process of evaluating corrective action alternatives to address potential future risks of MDA H.

## ALTERNATIVES FOR MDA H

An initial assessment of corrective action alternatives will be conducted, and public participation is actively encouraged. The alternatives below are suggested options. The ER Project will identify reliable and proven technologies to implement the option that will be selected. The preliminary list of alternatives being evaluated includes

- 1) maintenance of the existing cover and monitoring,
- 2) engineered cover and control of tritium vapors and near-surface stabilization, and
- 3) complete excavation with wastes disposed of off site.

The ER Project is requesting public input on the technology screening and the alternatives to be evaluated. Also, after the alternatives have been evaluated, public input will be requested on the alternative selection.

## OPPORTUNITIES FOR PUBLIC INVOLVEMENT

Contact the ER Project Communications & Outreach Team

Carmen M. Rodriguez  
Phone: (505) 665-6770  
Fax: (505) 665-7369  
Email Address: carmenr@lanl.gov

ER Project Web site: <http://erproject.lanl.gov>